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PALÆOZOIC SPONGES

— OF —

NORTH AMERICA.



## Palæozoic Sponges of North America.

The following Catalogue of the recognized Sponges found in the Palæozoic formations of North America is kindly offered as the opinion of the writer, in his studies upon these forms of life. It has seemed necessary to include the great family of RECEPTACULITIDÆ, although a few of the most acute biologic observers question the reference of these extinct forms to the Sponges. The Catalogue includes the still more doubtful group of PHYTODICTUONIDÆ.

It is the writers intention to review all that has been written upon these forms in Europe and North America; to illustrate many new genera and species not previously mentioned, and practically provide a compendium of all that is known upon the subject, to date.

The list of Bad and Doubtful genera and species, with a corresponding worthless nomenclature, affords a wide field for explanation and criticism upon the erroneous and conjectural Palæontology with which the Palæozoic Sponges of North America are burdened.

The recipients of this Catalogue are cordially requested to notify the writer of any and all errors or omissions.

WILLIAM R. HEAD,  
5467 Jefferson Avenue, Hyde Park,  
Chicago.

March 1, 1895.

# CATALOGUE

— OF —

## Recognized Palæozoic Sponges of North America. 1895.

Archæocyathus Minganensis.	Billings.	1865.	Calcif.	Group.	Mingan Islands.
Nipterella paradoxica.	Hinde.	1889.	"	"	"
Trichospongia sericea.	Billings.	1865.	"	"	"
Eospongia Roemeri	"	"	Chazy	"	"
" varians.	"	"	"	"	"
Trachyum cyathiforme.	"	"	Quebec	"	"
Brachiospongia digitata.	Marsh.	1867.	Trenton	"	Frankfort, Ky.
Anthaspidella mammulata.	Ulrich.	1891.	"	"	Dixon, Illinois.
" florifera.	"	"	"	"	"
" parvistellata?	"	"	"	"	"
" scutula.	"	"	"	"	"
Zittellella typicalis.	"	"	"	"	"
" lobata.	"	"	"	"	"
" subrotunda.	"	"	"	"	"
Oncosella catinum.	Rauff.	1894.	Up. Sil.		Hamilton, Ont.
Anomoclonella Zitteli.	Rauff.	1894.			
Chiasoclonella Headi.	"	"			
Pycnopegma pileum.	"	"			
Hindia fibrosa.	Duncan.	1879.	Low and Up. Sil.		
Astræospongia meniscus.	Rœmer.	1852.	Upper Sil.		Tennessee.
Climacospongia radiata.	Hinde.	1883.	"	"	"
Aulocopina Granti.	Billings.	1875.	"	"	"
" elongata.	n. s.	"			"
" expansa.	n. s.	"			"
Palæomanon cratera.	Rœmer	1860.			"
" cantharium.	Rauff, sp.	1894.			"
" cylinx.	"	"			"
Astylospongia præmorsa.	Rœmer.	1860.	Upper Sil.		"
" incisa.	"	1861.			"
" castanea.	"	"			"
" Rœmeri?	Hinde.	1883.			"
" bullifera.	Rauff.	1894.			"
" pleuriexcavata.	"	"			"
" Conwentzi.	"	"			"
" sororcula.	n. s.	1895.			"
" platybasis.	"	"			"
" Canadense.	"	"			"
Astrosphaera stellatin-sulcata.	Rœmer, sp.	1848.	Upper Sil.		"
" distortum.	Rauff, sp.	1894.			"
" quasi-sphericalis.	n. sp.	1895.			"
" multistellata.	"	"			"
" centripetalis.	"	"			"
" balantium.	Rauff, sp.	1894.			"
" lecythium?	"	"			"
Sticholobia inciso-lobata.	Rœmer, sp.	1848.			"
" glandulosum.	Rauff, sp.	1894.			"
" spicata.	n. sp.	1895.			"

## TYPOGRAPHICAL ERRORS.

- Page 1—3rd line. Palæozoic should be Palæozoic.  
 19th " Insert Tennessee next below Hamilton, Ont.
- Page 4—6th line. Insert 1861 in column of dates.
- Page 5—4th line. Dictyospongidae should be Dictyospongidae.
- Page 6—1st line. Correct to read Palæozoic.
- Page 7—2nd line from bottom. Correct to read Ferd. Rœmer.



# RECEPTACULITIDÆ.

## List of Genera and Species described in American Publications.

* <i>Receptaculites circularis</i> .	Emmons.	1855.	Galena, Illinois.	Amer. Geology, Vol. I.
" <i>occidentalis</i> ,	Salter	1859.	Pauquette's Rapids,	Can. Org. Remains. Dec 1
" <i>australis</i> .			Yarradong, N. S. W.	" " " "
" <i>sulcata</i> .	Owen, sp.	1861.	Galena, Illinois.	Geol. Wis., Vol. I.
" <i>Jonesii</i> .	Billings.	1865	Gaspé, Quebec.	Pal. Foss., Vol. I.
" <i>globularis</i> .	Meek & W.	1868.	Scales' Mound, Ill.	Geol. Surv. Ill., Vol. III.
" <i>subturbatus</i> .	Hall.	1879.	Waldron, Ind.	Geol. Sur. Ind., Vol. XI.
" <i>infundibuliformis</i> .	"	1887.	Schoharie, N. Y.	Pal. N. Y., Vol. VI.
<i>Selenoides Iowensis</i> .	D. D. Owen.	1852.	Turkey River, Iowa.	Geol. Sur. Wis., Iowa and Minn.
<i>Ischadites tessellatus</i> .	W. & Marcy	1861.	Chicago, Ill.	Bos. Soc. Nat. Hist., Vol. I.
" <i>Canadensis</i> .	Billings.	1863.	Esquesing, Ontario.	Geol. Can., p. 209.
<i>Calathium formosum</i> .	"	1865.	Cape Norman, N. F.	Pal. Foss. Vol. I.
" <i>affine</i> .	"	"	"	" " " "
" <i>Anstedi</i> .	"	"	Schooner Island, N. F.	" " " "
" <i>elegantulum</i> .	"	"	Mingan Islands.	" " " "
" <i>Bridgeportensis</i> .	nov. sp.	1895.	Chicago, Illinois.	"
" <i>cornua-copizæ</i>	" "	"	"	"
" <i>obconicalis</i> .	" "	"	"	"
<i>Sphaerospongia tessellatus</i> .	Pengelly, sp.	1861.	Devonshire, England.	Geologist, Vol. IV.
<i>Acanthochonia Barrandei</i> .	Hinde.	1884.	Bubowitz, Bohemia.	Quar. Jour. Geol. Soc. 40
<i>Marcevia Chicagoensis</i> .	n. g. n. s.	1895.	Chicago, Illinois.	"

\* The Belgian genus *Receptaculites Neptuni*. De France, 1827. (Neptune's bowl.) has not been found in North America. The American genus most closely allied to it, is globular. The Belgian fossil is in the shape of a platter or flat dish. Hence, the use of the word is erroneous when applied to North American forms of the Family.

## Genera and Species mentioned in European Publications, usually referred to as belonging to the Receptaculitidæ.

<i>Receptaculites Neptuni</i> .	De France.	1827.	Chimay and Couvin.	Belgium.
" <i>orbis</i> .	Eichwald.	1858.	Revel and Baltischeport.	Russia.
" <i>Bronni</i> .	"	"	"	"
" <i>arcticus</i> .	Etheridge.	1878.	Cape Louis Napoleon.	Arctic Regions.
<i>Escharites forniculosus</i> .	Schlotheim	1820	=R. orbis.—Esthonia	"
<i>Receptaculites occidentalis</i> .	Salter.	1858.	Pauquettes Rapids,	Canada.
" <i>australis</i> .	"	"	Yarradong, Australia.	"
" <i>Grindrodi</i> .	"	1868.	Malvern, England.	"
" <i>crassiparies</i> .	Rauff.	1892.	Ober-Kunzendorf, Silesia.	"
" <i>Damesii</i> .	"	"	Jewe. Esthland, Russia.	"
<i>Zamia Rossica</i> .	Kutorga.	1842.	= <i>Ischadites Murchisoni</i> .	"
			= <i>Tetragonis Murchisoni</i> .	"
<i>Ischadites Koenigii</i> .	Murchison.	1829.	Ludlow, England.	"
" <i>Grindrodi</i> .	Salter.	1868.	Malvern, England.	"
" <i>Eichwaldi</i> .	F. Schmidt.	1860.	Itfer, Russia.	"
" <i>Bohemica</i> .	Barrande.	1872.	Hlubocep, Bohemia.	"
" <i>Lindstroemi</i> .	Hinde	1884	Petesvik, Gothland.	"
" <i>rectus</i> .	Rauff.	1892.	Lyckholm, Russia.	"
" <i>Vichtensis</i> .	"	"	Aachen, Germany.	"
" <i>Altaicus</i> .	Eichwald.	1872.	Altai, Russia.	"
<i>(Zamia Rossica—Kutorga)</i>				
<i>Tetragonis Murchisonii</i> .	Eichwald.	1842.	Wesenburg, Russia.	"
" <i>Eichwaldi</i> .	Schmidt.	1858	Itfer, Russia.	"
" <i>sulcata</i> .	Eichwald.	1842.	Esthland, Russia.	"
" <i>parvipora</i> .	"	"	"	"
<i>Acanthochonia Barrandei</i> .	Hinde.	1884.	Bubowitz, Bohemia.	"
<i>Sphaerospongia tessellatus</i> .	Pengelly.	1860.	Devonshire, England.	"

The recognized Genera and Species of both Europe and North America are fully described or especially referred to in the text.

The following should be regarded as Synonyms or as Invalid terms  
which are erroneously referred to in European Palæont-  
ology as belonging to the Receptaculitidæ.

Coscinopora placenta.	Goldfuss.	1826.	Couvin, Belgium.
" sulcata.	"	1832.	"
Polyparium	Hisinger.	1837.	Esthland.
Escharites forniculosum.	Schlotheim.	1858.	"
Pasceolus Rathii.	Kayser.	1875.	=Sphærospongia. Pengelly.
" tessellatus.	"	"	"
Dictyophyton Gerolsteinense.	Rœmer.	1883.	Gerolstein, Germany.
Lepidolites dickauti.	Ulrich.	1889.	Cincinnati, Ohio.
Sphæronites pomum.	Salter.	1861.	Devonshire, England.
" rhombifer.	Rœmer.	1850.	Harz, Germany.
" tessellatus.	"	1844.	"
Polygonosphærites tessellatus.	"	1880.	Gerolstein, Germany.
" rhombifer.	"	"	"
Echinosphærites tessellatus.	Murchison.	1855.	"
	Verneuil & K.	"	"
Receptaculites carbonarius.	Rœmer.	1872.	Rothwaltersdorf, Silesia.
" rhombifer.	"	1850.	Harzebirges, Germany.
" scyphoides.	"	1878.	"
" Eifelensis.	Schlüter.	1887.	Eifel Range, "
" Bronni.	Eichwald.	1858.	Revel, Russia.
Ischadites antiquus.	Salter.	1866.	Garn. Arenig, Wales.
" dickauti.	Rauff.	1892.	Cincinnati, Ohio.
" squamifer.	Hall.	1887.	Schoharie, N. Y.
" bursiformis.	"	"	"
Tetragonis Eichwaldi,	F. Schmidt.	1858.	Itfer, Russia.
" Daubyi.	McCoy.	1855.	Kendall, England.
" Eifelensis.	Rœmer.	1883.	Eifel, Germany.
Acanthochonia Devonica?	Schlüter.	1887.	Hlubokep, Bohemia.
Cyclospæridium.	Rœmer.	1870.	Harzebirges, Germany.
Nidulites favus.	Salter.	—	Haverfordwest, Wales.
Sphærospongia inosculans.	"	1865.	Niti Pass.—East Indies.
" meliflua.	"	1873.	"
" hospitalis.	"	"	"
" Vichtensis.	Schlüter.	1887.	Aachen, Germany.
" sculpta.	"	"	"
" megarhaphis.	"	"	"
Cyclocrinus Spaskii.	Eichwald.	1852.	"



# List of erroneously assigned, inaccurately described, including Bad and Doubtful Species mentioned as Receptaculites in American Geological Publications.

Receptaculites Neptuni.	Hall.	1847.	Not found in America.
" orbicularis.	"	"	Cited by Gumbel. Recep. p. 205.
" Iowene. (sic.)	"	"	Rep. Progress. Geol. Sur. Wis. p. 14.
" fungosum.	"	"	" " " " " " p. 15.
" globulare. (sic)	"	"	" " " " " " p. 16.
" infundibulum.	"	"	=Ischadites tessellatus Id. p. 16.
" hemisphericum.	"	"	Rep. Progress. Geol. Sur. Wis. p. 16.
" infundibuliformis	"	1887.	=Recep. monticulatus.—Pal. N. Y., Vol. 6, page 229.
" sacculus.	"	1879.	Trans. Alb. Ins. (Ab.) page 1.
" Eatoni.	"	1863.	Obsolete.
" bursiformis.	"	1883.	Rep. State Geologist N. Y. 1882.
" monticulatus.	"	1883.	=Coscinopora infundibuliformis. Eaton.
" Ohioensis.	Hall and Whitfield.	1874.	Geol. Sur. Ohio. (Palaeont) Vol. 2, page 123, pl. 6 fig. 1.
" circularis.	Emmons	1855.	American Geology. Vol. 1, p. 230, fig. 82.
" formosus.	Meek and Worthen.	1875.	=Isch. tessellatus. Geol. Sur. Illinois, Vol. 6, p. 500.
" Devonius.	Whitfield.	1882.	Doubtful. N. Y. Acad. Sci., Vol. 2, page 198. (lapsed.)
" Sp? (sic)	Clarke.	1885.	"Supposititious fragments." Bul. No. 16, U. S. Geol. Sur., p. 72.
" Iowensis.	Hall.	1862.	Selenoides Iowensis. Geol. Wis., Vol. IV, p. 420.
" calciferus.	Billings.	1865.	Palaeozoic Fossils, Vol. 1, p. 384, fig. 358.
" Canadensis.	"	"	Fragments only. idem. p. 385, fig. 362.
" insularis.	"	1866.	Cat. Sil. Foss. Anticosti, p. 29. Not illustrated.
" mammularis.	Walcott.	1885.	U. S. Geol. Sur. Mon. 8, p. 65, fig. 11.
" ellipticus.	"	"	" " " " " " p. 67, fig. 12.
" elongatus.	"	"	" " " " " " p. 66.
" Gumbeli.	Hague.	1880.	U. S. Geol. Sur. Vol. 2, p. 80
" Elrodi.	S. A. Miller.	1892.	Geol. Ind., Vol. 18, p. 1, pl. 1, fig. 1, 2, 3.
" dactioloides.	" " "	1877.	Inaccurately included in the Cincinnati catalogue.
Dictyoerinus squamifer.	Hall	1859.	Geol. Sur. N. Y. Pal. Vol. 3, (part 2), page 135.
Dictuocrinites	Conrad.	1841.	15th Reg. Rep. N. Y. Pl. 11, fig. 22.
Coscinopora infundibuliformis.	Eaton.	1832.	16th " " " " Pal. N. Y., Vol. 6, pl. 24, fig. 3-11.
" sulcata.	Eaton.	1834.	16th Reg. Rep. N. Y. and Geol. Text Book.
Orbitulites? reticulata.	D. D. Owen	1844.	=Selenoides Iowensis.
Lunulites dactioloides.	" " "	"	Geol. Exp. Iowa, Wis. and Ill., 1844, p. 69, pl. 13, fig. 4.
Ischadites bursiformis.	Hall.	1887.	Geol. Sur. N. Y. (Pal.) Vol. 6, p. 299, pl. 24, fig. 3-11.
Pasceolus? dactylioides.	Meek and Worthen.	1868.	=Lunulites dactioloides of David Dale Owen.
Cerionites dactioloides.	Whitfield.	1882.	=Lunulites dactioloides of David Dale Owen Geol. Wis. Vol. 4, p. 267, pl. 13, fig. 1-3
Ischadites squamifer.	Hall.	1887.	=Dictuocrinites (Conrad, 1841.). Worthless. Pal. N. Y. Fol. 6, pl. 24, gg. 1-2
———— cyathiformis. (sic)	"	1847	Pal. New York. Vol. 1, p. 72.



# PHYTODICTUONIDÆ.

List of indistinctly preserved reticulate fronds and uncertain forms which have been previously referred to the Sponges. Some of these hollow membranous fronds and cups have been erroneously called Dictyospongidæ.\* The true zoological position of most of them is very doubtful.

Rhombodictyon reniformis.	Whitfield.	1886.	Low. Sil.
“ var. rhombiforme.	“	“	“
“ discum	“	“	“
Cyathophycus reticulatus.	Walcott.	1879.	Sil.
“ subsphericus.	“	“	“
Rauffella filosa.	Ulrich.	1889.	“
“ palmipes	“	“	“
Leptopoterion mamiferum.	“	“	“
Lepidolites dickhauti.	“	1879.	“
“ elongatus.	“	“	“
Diagoniella coronata.	Rauff.	1894.	“
“ cyathiformis.	“	“	“
Dictyophytra Walcott.	Rauff.	1894.	Sil.
“ Danbyi.	“	“	“
Teganium subsphæricum.	“	“	“
Dictyophyton filitextile.	Hall.	1863.	Devonian.
“ nodosum.	“	“	“
“ Conradi	“	“	“
“ annulatum.	“	“	“
“ fenestratum.	“	“	“
“ tuberosum.	“	“	“
“ Hamiltonensis.	“	“	“
“ patulum.	“	“	“
“ prismaticum.	“	“	“
“ telum.	“	“	“
“ Newberryi.	“	“	“
“ rude	“	“	“
“ irregulare.	“	“	“
“ baculum.	“	“	“
“ tenue.	“	“	“
“ sacculus.	“	“	“
“ paralellum.	“	“	“
“ cinctum.	“	“	“
“ Redfieldi.	“	“	“
“ abacus.	“	1884.	“
“ cylindricum	Whitfield.	1881.	Devonian.
“ catilliforme.	“	“	“
Uphantenia Chemungensis.	Vanuxem.	1842.	Devonian.
Ectenodictya implexa.	Hall.	1884.	“
“ expansa.	“	“	“
“ eccentrica.	“	“	“
“ Burlingtonensis.	“	“	“
Lyrodictya Romingeri.	“	“	Devonian.
Thamnodictya Newberryi.	“	“	“
Cleodictya gloriosa.	“	“	“
“ Mohri.	“	“	“
Phragmodictya catilliformis.	“	“	Lower Carb
“ lineata.	“	“	“
“ patelliformis.	“	“	“
“ scyphus.	“	“	“
Physospongia Dawsoni.	“	“	“
“ Colletti.	“	“	“
“ alternata.	“	“	“

\*The name Dictyospongiæ was pre-occupied by “Gray’s System of Sponges,” 1867. Dr. Hall’s nomenclature will necessarily have to be revised, altered and amended when these forms are better understood, and the sub-family is studied by a competent specialist in Spongiology, with all the original fossils before him.

# PALÆOZOIC SPONGES.

## Bad and Doubtful Genera and Species.

List of erroneously assigned, incorrectly described, misunderstood, bad and doubtful species; unnecessary genera and species; erroneous nomenclature, and invalid terms improperly applied in connection with the Spongidae in North American Palæontology, including European generic and specific terms inappropriately mentioned or erroneously referred to as being Sponges.

Acanthinella.	Beecher.	1889	Inadvertantly printed. Probably refers to Acanthactinella.
Acanthactinella.	Hinde.	1884	Detached spicules. Form of sponge unknown. Not an American genus.
Acanthoconia.	Beecher.	1889	=Acanthoconia of Hinde. Not an American genus.
Acanthodictya hispida.	Dawson.	"	Imaginary pyritiferous markings found in black shales in Canada.
Acanthospongia Siluriensis.	McCoy.	1862	Lapsed
" Smithii.	Young & Y.	1877	Detached spicules of an unknown sponge.
Acestra subularis.	Rœmer.	1861	Sponge rootlets.
Achilleum cerasus.	Eichwald.	1859	Obsolete=Manon globosum. Worthless.
Actinostroma Trentonense.	Ulrich.	1891	Worthless. Probably a Stromatoporida.
Amorphospongia.	Rœmer.	1880	An obsolete term in spongiology.
Amorphozoom.	Hall.	1865	=Brachiospongia.
Amphispongia.	Salter.	1861	Found in Scotland. Somewhat similar fragments are known in the Silurian rocks in America.
Anthaspidella fenestrata.	Ulrich.	1891	Unnecessary species. See Appendix.
" grandis.	"	"	" "
" firma.	"	"	" "
" obliqua.	"	"	" "
Anthaspidellidæ.	"	"	See Appendix.
Archæocyathellus Rensselericus	Ford.	1873	Obsolete. See Appendix.
Archæocyathus Atlanticus.	Billings.	1861	=Spirocyathus Atlanticus. Hinde. See Appendix.
" profundus.	"	"	=Ethmophyllum profundum.
" pavonoides.	Matthew.	1887	Corallites. Lapsed.
" Billingsi.	Walcott.	1886	" "
" gracilis.	"	"	" "
" Dwighti.	"	1889	Lapsed.
" rarus.	"	1890	" "
" Rensselericus.	"	"	" "
" Marianus.	Rœmer.	1880	A coral, found in Spain.
Archæocyathinæ.	Borneman.	1884	Not applicable to spongiology.—Corallites
Archæoscyphia Minganense.	Hinde.	1889	An unnecessary change of name. Synonym for Archæocyathus Minganense. Billings.
Archæosphærina.	Matthew.	1887	Semi-calcareous concretions: worthless.—Said to be found with Eozoon.
Asteractinella.	Hinde.	1884	Detached spicules. Form of sponge is not known.
Astræospongia Hamiltonensis.	Meek & W.	1860	Very doubtful.
" Devonensis.	Hinde.	1880	Has no specific character. See Octacium.
" meniscoides.	Dewalque.	1887	Doubtful. See Octacium.
" Eifelensis.	Schlüter.	1885	" "
Astræospongium.	Rœmer.	1852	Lapsed. Formerly applied to Astræospongia.
"	Barrois.	1875	Erroneously ascribed to the calcareous sponges
Astrocladia elongata.	Matthew.	1889	Erroneous use of the generic term.



Astrocladia elegans.	Matthew.	1889	Erroneous use of the generic term.
" virguloides.	"	"	" " " " " "
Astroconia Granti.	Sollas.	1881	Detached spicules. Sponge body unknown.
Astylospongia Perryi.	Billings.	1861	Not a valid species.
" parvula.	Quenstedt.	1861	" " " " " "
" meandrina.	"	1871	" " " " " "
" pilula.	Rœmer.	1861	" " " " " " A young form of another species.
" Christiani.	Meek & W.	1868	Doubtful.
" radiata.	Linnars.	1871	A Scandinavian form of doubtful character.
" Gothlandica.	Schlüter.	1884	A Scandinavian form of doubtful character.
" bursa.	Hall.	1876	Not a valid species. Lapsed.
" nux-moschata.	"	"	" " " " " "
" cratera.	"	"	" " " " " "
" inornata.	"	1878	= Hindia fibrosa, Rœmer sp.
" Rœmeri.	Hinde.	1883	Fragments from an unknown locality.
" pusilla.	Rauff.	1894	A frivolous term. Not a good species.
" grata.	Salter	1873	Somewhat resembling A. inciso-lobata. Not a good species.
" pericarpum.	"	"	Somewhat resembling A. inciso-lobata. Not a good species.
" Sangamonensis?	Ulrich.	—	—
" carbonaria?	"	1888	—
" globosa.	"	—	Not a good species. Cincinnati catalogue.
" faviolata.	James.	—	Not a good species. Cincinnati catalogue.
" tumida.	"	—	Not a good species. Cincinnati catalogue.
" subrotunda.	"	—	= Chætetes.
Batospongia spicata.	Ulrich.	1891	Needs verification.
Beatricea.	Billings.	1857	A Stromatoporiid, correctly defined by Nicholson. Palæontographical Society. London, 1885. Pages 86-90.
Belemnospongia fascicularis.	Ulrich.	1891	A very doubtful form. Its sponge-character needs verification.
Biopalla.	Wallace.	1878	Worthless in spongiology.
Blumenbachium meniscus.	Rœmer.	1848	The original name applied to Astræospongia meniscus.
Brachiospongia Lyoni.	Marsh.	1867	See Appendix. = Brachiospongia digitata Marsh.
" Rœmerani.	"	"	See Appendix. = Brachiospongia digitata Marsh.
" Hoveyi.	"	"	See Appendix. = Brachiospongia digitata Marsh.
Brachiospongiæ.	Beecher.	1889	See Appendix.
Calamopora fibrosa.	Rœmer.	1860	"Original name applied to Hindia fibrosa" Rauff. Hence the specific name should be retained
Calathella Anstedii.	Rauff.	1894	An unnecessary synonym.
Calathium infelix.	Ulrich.	1891	Erroneous nomenclature. See Appendix.
" obliquum.	"	"	" " " " " "
" Canadense.	Billings.	1865	Doubtful species, based on fragments.
" Fittoni.	"	"	" " " " " "
" pannosum.	"	"	" " " " " "
" crassum.	"	"	" " " " " "
Camarocladia dichotoma.	Ulrich.	1891	Bryozoan or a small bunch of a fucoid.
Carpospongia globosa.	Rauff.	1894	The species is not good.
" Conwentzi.	"	"	" " " " " "
" castanea.	"	"	Synonym for Astylospongia castanea. Fred Rœmer. 1861.
Caryospongia juglans.	"	"	Has no specific character. See Appendix.

<i>Caryospongia nux-moschata.</i>	Rauff.	1894	Has no specific character. See Appendix.
“ <i>multisulcata.</i>	“	“	“ “ “ “ “ “ “ “
<i>Chirospongia Faberi.</i>	S. A. Miller.	1889	See Appendix.
“ <i>Wendti.</i>	“	“	“ “ “ “ “ “ “ “
<i>Chonipora lichenoides.</i>	James.	—	Cincinnati catalogue. See Appendix.
“ <i>papillata.</i>	“	—	“ “ “ “ “ “ “ “
“ <i>scabra.</i>	“	—	“ “ “ “ “ “ “ “
<i>Clathrospongia abacus.</i>	Hall.	1882	Generic term abandoned and the species assigned to <i>Dictyophyton</i> .
<i>Cnemidium Trentonensis,</i>	Worthen.	1875	Erroneously described.
<i>Conopoterium effusum.</i>	Winchell.	1865	A corallite. Its author did not regard it as a sponge.
<i>Coscinocyathus.</i>	Walcott.	1888	Not a sponge. Said to have been found in Labrador.
<i>Cyathophycus reticulatus.</i>	“	1879	Doubtful. Needs verification.
“ <i>subsphaericus.</i>	“	1881	Doubtful. = <i>Teganium</i> . Rauff.
“ <i>Quebecensis.</i>	“	1888	Not a good species.
<i>Cyathospongia reticulata.</i>	“	1879	Syn. <i>Cyathophycus</i> . Worthless.
“ <i>excrecens.</i>	Hall.	1882	Lapsed.
“ <i>Quebecensis.</i>	Dawson.	1889	Doubtful pyritiferous markings found in black shales in Canada.
“ <i>eozoica.</i>	Matthew.	1890	Very doubtful. Said to be found in Laurentian graphites.
<i>Cyclocrinus Spaskii.</i>	Eichwald.	1852	Not a sponge.
<i>Cyclosporgia discus.</i>	S. A. Miller.	1891	Not a good genus. Has no sponge character.
<i>Cylindrocœlia endoceroidea.</i>	Ulrich.	1889	Geol. Sur. Illinois, Vol. 8, page 240. Classified as being <i>Pharetrones</i> of Cambrian age.
“ <i>Minnesotensis.</i>	“	“	“ “ “ “ “ “ “ “
“ <i>Covingtonensis.</i>	“	“	See Appendix. “ <i>Pharetrones</i> .”
“ <i>minor.</i>	“	“	“ “ “ “ “ “ “ “
<i>Cystospongia.</i>	“	—	Worthless. See Appendix.
<i>Dactyloidites bulbosus.</i>	C. A. Hall.	1886	Geol. Sur. Penn. Vol. P4, pl. 1041, fig. 1-2
<i>Diagoniella coronata.</i>	Rauff.	1894	A doubtful term for Dawson's doubtful <i>Protospongia</i> .
“ <i>cyathiformis.</i>	“	“	A doubtful term for Dawson's doubtful <i>Protospongia</i> .
<i>Dichoplectella irregularis.</i>	Matthew.	1889	Unnecessary. Worthless as a genus or species.
<i>Dictyophytra Walcott.</i>	Rauff.	1894	Name proposed for <i>Dictyophyton</i> .
“ <i>Danbyi.</i>	“	“	“ “ “ “ “ “ “ “
<i>Dictyophytridæ.</i>	“	“	See Appendix.
<i>Dictyospongiidæ.</i>	Hall.	1882	“ “ “ “ “ “ “ “
<i>Discophyllum peltatum.</i>	“	1847	Doubtful. Requires verification.
<i>Domospongia.</i>	Schlüter.	1887	Not accepted in Spongiology.
<i>Dystactospongia insolens</i>	S. A. Miller.	1882	See <i>Pharetrones</i> in Appendix.
“ <i>minor.</i>	“	1891	“ “ “ “ “ “ “ “
“ <i>minima.</i>	“	1889	“ “ “ “ “ “ “ “
“ <i>rudis.</i>	“	1891	“ “ “ “ “ “ “ “
<i>Edriospongia basalis.</i>	Ulrich.	—	See “ <i>Anthaspidellidæ</i> ” in Appendix.
<i>Eocoryne.</i>	Walcott.	1886	Enumerated as a sponge in U. S. Bulletin, No. 30, p. 59.
“ <i>gemina. (sic)</i>	Ulrich.	1890	Enumerated as a sponge in Geol. Sur. Ill., Vol. 8, p. 240
“ <i>geminum.</i>	Matthew.	1886	Proc. Roy. Soc. Canada, Vol. 4, pl. 4.
<i>Eophyton explanatum.</i>	Hicks.	1869	Not a sponge.
<i>Eospongia communis.</i>	Ulrich.	—	The Cincinnati catalogue. See Appendix.
“ <i>Turnerensis.</i>	“	—	“ “ “ “ “ “ “ “
<i>Eozoon Canadensis.</i>	Dawson.	1865	Not regarded as having had an organic origin.
“ <i>Bavaricum.</i>	Gümbel.	1866	Not regarded as having had an organic origin.
<i>Eridostroma densa.</i>	Ulrich.	—	The Cincinnati catalogue.
“ <i>densissima.</i>	“	—	“ “ “ “ “ “ “ “
<i>Escharopora.</i>	Eichwald.	1852	Not a sponge.



Ethmophyllum Whitneyi.	Meek	1868	See Appendix.—Ethmophyllum is a corallite
" gracilis.	"	"	See Appendix.
" Meeki.	Walcott.	1889	"
" profundum.	"	1886	United States Bulletin, No. 30, page 84, pl. 1, fig. 1, et seq.
" Minganense.	Ulrich.	1891	Geol. Sur. Illinois, Vol. 8, page 240.
" rarum.	"	"	" " " " " " " "
" Rensselaëricum.	"	"	" " " " " " " "
Fungispongia irregularis.	Ringueberg.	1884	Very doubtful. Needs verification.
Girvanella ocellatus. (sic)	Walcott.	1890	U. S. Geol. Sur., Vol. 10, page 598. Worthless as a sponge. Girvanella is not regarded as an organism. It is a structureless accretion
Halichondrites confusus.	Dawson.	1889	Pyritiferous markings in which "no structure whatever can be recognized."
" graphitiferus.	Matthew.	1890	Transactions of the Roy. Soc. of Canada. 1889. Worthless as sponges.
Heterospongia subramosa.	Ulrich.	1891	Described as a Calcareous sponge of Cambrian Age.
" Knotti.	"	"	Described as a Calcareous sponge of Cambrian Age.
" aspera.	"	"	Described as a Calcareous sponge of Cambrian Age.
" nodulosa.	"	"	Described as a Calcareous sponge of Cambrian Age.
Hindia sphæroidalis.	Duncan.	1879	Should be Hindia fibrosa.
" parva.	Ulrich.	1891	Worthless as a specific name.
" inequalis.	"	"	Has no specific character.
Hyalonema Girvanense.	Nicholson.	1880	Doubtful.
Hyalostelia.	Zittel.	1878	Not a generic name.=Acestra=basalia=sponge rootlets. Its author admits that its generic characters are not known, and that it merely refers to a portion of the anchoring-rope of an unknown sponge.
" delicatula.	Ulrich.	1891	Misnomer.
" solivaga.	"	"	=Pyritonema gracile. Rauff. =Acestra. Roemer.
" Mettissica.	Dawson.	1888	Presents no sufficient evidence of sponge-structure. Too fragmentary to permit of description.
" minima.	Matthew.	1889	Useless.
Hystriospongia carbonaria.	Ulrich.	1891	Worthless as a sponge.
Jerea excavata.	D'Orbigny.	1850	=Astylospongia præmorsa. Roemer. 1860
Lasiocladia Hindei.	Ulrich.	1891	This species needs verification. Doubtful
"	Dawson.	1889	Described as small ovoid masses having strong root spicules.
Lasiothrix flabellata.	"	"	Imaginary pyritiferous markings, found in black shales in Canada.
" curvicostata.	"	"	Imaginary pyritiferous markings, found in black shales in Canada.
Lepidolites Dickhauti.	Ulrich.	1879	Not a good genus.
" elongatus.	"	"	" " " "
Leptomites.	Beecher.	1889	Misnomer for Leptomitus. Void.
Leptomitus Zitteli.	Walcott.	1886	Conjectural sponge-rootlets.—National Museum Catalogue of Invertebrate Fossils, No. 15308—Should be verified or abandoned. Not entitled to either generic or specific distinction. See Appendix. U. S. Geol. Sur. Vol. 10, p. 579., pl. 49, fig. 1, ta.
Leptopoterion mammiferum.	Ulrich.	1889	Conjectural.=Lepidolites.
Mastopora.	Eichwald	1852	Not a sponge
Megastroma.	Dawson.	1888	" " " "
Microspongia gregaria.	Miller & D.	1878	Invalid. See Appendix.

Microspongia parva.	Ulrich.	1889	Worthless as a specific term.
"    irregularis.	"	"	"
Nidulites favus.	Salter.		Erroneously referred to the sponges.
Octacium rhenanum.	Schlüter.	1878	An exceedingly doubtful form. Unknown detached spicules, supposed to be related to Astræospongia.
Palæacis cuneiformis.	M-Edwards.	1860	European genus of corals.
"    compressum.	Meek & W.	"	Teeth of sauroid fishes.
"    cuneatum.	"	"	"
"    enorme.	"	"	"
"    obtusum.	"	"	"
"    cavernosa.	S. A. Miller.	1891	This species is classed with the Porifera by its author.
Palæomanon bursa.	Hall.	1875	Not a valid species. 28th Reg. Rep. N. Y., p. 105.
"    Rœmeri.	Walcott.	1885	Not a valid species. U. S. Geol. Sur. Mon. VIII, page 99, Pl. 13, fig. 12.
Palæosaccus Dawsoni.	Hinde.	1893	Pyritiferous markings supposed to represent a portion of an unknown sponge.
Palæospongia cyathiformis.	S. A. Miller.	1889	The generic term is worthless.
"    Trentonensis.	"	"	"
"    prisca.	Borneman.	1891	"
Pasceolus Halli.	Billings.	1865	The author of the genus did not refer it to the sponges, but several writers have more recently done so. Its true position is not determined. Should not be regarded as a sponge. Cyclocrinus and Nidulites are equally enigmatic.
"    globosus.	"	"	"
"    gregarius.	"	"	"
"    intermedius.	"	"	"
Pattersonia difficilis.	S. A. Miller.		Sponge character is not verified, but probably will be hereafter.
"    tuberosa.	Beecher.	1882	Dr. Beecher's genus Strobilospongia is a
"    aurita.	"	1889	Synonym.
"    Ulrichi.	Rauff.	"	Dr. Beecher's genus Strobilospongia is a synonym.
Petrospongia.	—	1894	Very doubtful species.
Pharetrones.	Ulrich.		An obsolete term, formerly applied to fossil sponges.
Physospongia Dawsoni.	"	1889	See Appendix.
Plocoscyphia perantiqua.	Matthew.	"	Worthless.
Polygonosphærites.	Rœmer.	1880	An incorrect term. Worthless. Sometimes described in German literature as a calcareous, although unknown form of life.
Protocyathus rarus.	Ford.	1887	A corallite, formerly regarded as a sponge.
Protospongia fenestrata.	Walcott.	1886	Worthless as a species as described in the United States Survey. Mon. 8, p. 11, pl. 9, fig. 5.
"    minor.	Matthew.	1887	Worthless as a species.
"    "    var. distans.	"	"	"
"    tetranema.	Dawson.	1888	An imaginary form.
"    delicatula.	"	1889	"
"    mononema.	"	"	"
"    polynema.	"	"	"
"    coronata.	"	"	"
"    cyathiformis.	"	"	"
"    diffusa.	Salter.		Doubtful European species
"    flabella.	"	"	"
"    major.	"	"	"
"    maculæformis.	Holl.	"	"
"    Ludensis.	"	"	"
"    Hicksi.	Hinde.	1888	"
"    carbonaria.	Dames.	1884	"
"    Rhenana.	Schlüter.	1892	"



Pulvillus Thomsonii.	Carter.	1881	Inorganic concretions.
Pyritonema fascicularis.	M'Coy.	1852	European. Doubtful. See Appendix.
fasciculus.	"	1855	European. Doubtful.
metissicum.	Dawson.	1889	Worthless.
subulare.	Rauff.	1894	Doubtful.
Girvanense.	"	"	"
Rauffella filosa.	Ulrich.	1889	Needs verification. Am. Geol. Vol. 3, p. 235, fig. 1-2.
Rhabdaria fragilis	Billings.	1865	Doubtful even as sponge rootlets.
furcata.	"	"	"
Ribeiria calcifera.	Ulrich.	1891	"
longiuscula	"	"	"
Saccospongia rudis.	Ulrich.	1889	Needs verification. See Appendix.
Danvillensis.	"	"	"
Scolecolithus chordaria.	Eichwald.	1859	=Acestra. Sponge-rootlets.
Scyphia digitata.	D. D. Owen.	1857	=Brachiospongia digitata. — Marsh.
stellata.	Troost.	1840	Original name of Brachiospongia
Silurispongia conus.	Martin.	1878	Spicular structure not found.
Siphonia præmorsa	Goldfuss.	1826	Obsolete name of Astylospongia.
excavata	"	"	"
stipitata.	Hisinger.	1837	"
Sorospongia radiata.	Ulrich.	1882	Doubtful.
Sphærolites Nicholsoni.	Hinde.	1875	Manuscript only. Obsolete.
Sphæronites.	Phillips	1841	Obsolete.
pomum	Salter.	1861	"
Sphærospongia hospitalis.	"	1873	Not a sponge.
meliflua.	"	1865	"
inosculans.	"	"	"
Sphenopoterium cuneatum.	Meek & W.	1860	Sponge structure not determined.
compressum.	"	"	=Palæacis. Fish remains
enorme.	"	"	"
obtusum.	"	"	"
Spirocyathus.	Hinde.	1889	A corallite.
Spongarium interruptum.	M.-Edwards.	1852	Mur. Sil. Sys. 1854, pl. 12, fig. 5. Lapsed.
Steganodictyum.	M'Coy.	1877	Found to be fish remains.
Strephochetus ocellatus.	Seely.	1885	Bad genus. Should be abandoned.
atratus.	"	"	"
Brainardi.	"	"	"
Richmondensis.	S. A. Miller.	1882	Described as Stromatocerium.
Streptosolen obconicus.	Ulrich.	1891	Not a valid genus.
Streptospongia confusa.	"	1889	=Distactospongia. Worthless.
labyrinthica.	"	1891	"
Strobilospongia tuberosa.	Beecher.	1889	Previously described as Pattersonia. The fossils require more careful examination before they are accepted as sponges.
aurita.	"	"	Synonym for supposed sponge.
Strotospongia maculosa.	Ulrich.	1891	See Anthaspidellidæ in Appendix.
Syringelasma Wortheni.	"	"	Worthless as a genus and species. A fragment of fossil shagrin.
Syringophyllum.	"	"	Name pre-occupied. See Syringelasma.
Teganium subsphæricum.	Rauff.	1894	=Cyathophycus.
Tetradium.	"	"	Not a sponge.
Trachyum rugosum.	Billings.	1865	Doubtful species.
vetustum.	Dawson.	1890	A corallite: not a sponge U. S. Geol. Sur. Vol. 10, p. 598, fig. 60.
Tricholites typicalis.	Ulrich.	1880	Worthless as a generic term. Cited in a local catalogue.
Trochospongia.	Rœmer.	1887	Not accepted in Spongiology.
Zittellella pistilliformis.	Ulrich.	1891	Unnecessary specific term.
turbinata	"	"	"
inosculata.	"	"	"
Zittrella (undetermined).	"	1891	Misnomer in Bierbauer's Catalogue. Bul. No. 2, Vol. 3, Minn. Acad. Science.

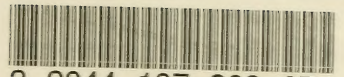












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